What is Claimed:

1. In a system used to analyze a plurality of digital images, a multiple hypothesis method to accomplish optical flow calculation, including recognition of large motions of thin objects, comprising;

a. selecting a first image and a second image from the plurality of digital images;

b. separating the second image into a plurality of discrete sections;

c. identifying a plurality of features in the first image;

d. using a direct optical flow method on one of the plurality of features of the first image to find a plurality of local optimal solutions corresponding to the plurality of discrete sections of the second image;

e. selecting a globally optimal solution from among the plurality of local optimal solutions; and

f. repeating steps d and e for each of the plurality of features of the first image.

2. The method of claim 1, wherein the step of separating the second image into the plurality of discrete sections comprises the step of dividing the second image into a plurality of rectangular blocks.

3. The method of claim 2, wherein the step of identifying the plurality of features in the first image includes the step of defining a plurality of NxN pixel blocks in the first image, each NxN block including a respective feature.

4. The method of claim 3, wherein N varies in inverse proportion to a pixel to pixel variation in a nearby region of the first image.

5. The method of claim 1, wherein the step of identifying the plurality of features in the first image includes receiving feature selections provided by an operator.

6. The method of claim 1, wherein the step of identifying the plurality of features in the first image includes selecting the features using an edge detection method.

7. The method of claim 1, wherein the step of selecting the globally optimal solution from among the plurality of local optimal solutions includes the step of optimizing a normalized correlation matching score of respective gray levels of a plurality of neighboring pixels in the second image relative to the first image.

8. The method of claim 1, wherein the step of selecting the globally optimal solution from among the plurality of local optimal solutions includes the step of optimizing a sum of a plurality of absolute difference scores of respective gray levels between a plurality of neighboring pixels in the first and second images.

9. The method of claim 1, wherein the step of selecting the globally optimal solution from among the plurality of local optimal solutions includes the steps of:

computing a parallax-related constraint for the plurality of features;

optimizing a parallax-related constraint to the plurality of local optimal solutions in order to select a globally optimal solution from among the plurality of local optimal solutions consistent with the parallax-related constraint.